Claims

[c1] 1. A thermoplastic resin composition comprising:
a thermoplastic resin;
an organo phosphate in an amount less than or equal to about 20 parts by weight for every 100 parts by weight of the thermoplastic resin; and
a polyhydric alcohol in an amount of about 0.25 to about 5.0 parts per weight for every 100 parts by weight of the thermoplastic resin.

[c2] 2. The thermoplastic resin composition of Claim 1, wherein the pentaerythritol is in an amount of about 0.5 to about 2.0 parts for every 100 parts by weight of the thermoplastic resin.

[c3] 3. The thermoplastic resin composition of Claim 1, wherein the pentaerythritol in is an amount of about 1.0 parts per weight for every 100 parts by weight of the thermoplastic resin.

[c4] 4. The thermoplastic resin composition of Claim 1, wherein the thermoplastic resin comprises a polyphenylene ether resin, an acrylonitrile/butadiene/styrene rubber, or a styrenic polymer composition.

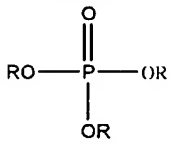
[c5] 5. The thermoplastic resin composition of Claim 1, wherein the thermoplastic resin consists essentially of a polyphenylene ether resin and a high impact polystyrene resin.

[c6] 6. The thermoplastic resin composition of Claim 1, further comprising at least one additive selected from the group consisting of drip retardants, dyes, pigments, flow enhancers, impact modifiers, colorants, reinforcing agents, fillers, glass fibers, stabilizers, antistatic agents, plasticizers and lubricants.

[c7] 7. The thermoplastic resin composition of Claim 1, wherein the polyhydric alcohol is selected from the group consisting of pentaerythritol, dipentaerythritol, tripentaerythritol, pentitols, hexitols, and saccharides.

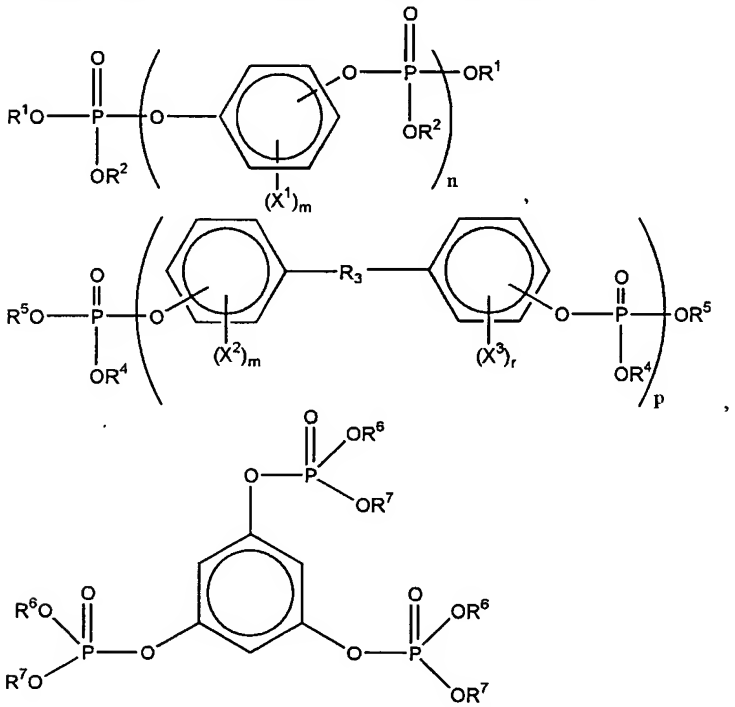
[c8] 8. The thermoplastic resin composition of Claim 1, wherein the organo phosphate is selected from the group consisting of RDP and BPA-DP.

[c9] 9. The thermoplastic resin composition of Claim 1, wherein the organo phosphate of formula:



wherein R is the same or different and is an alkyl, cycloalkyl, aryl, alkyl substituted aryl, halogen substituted alkyl, aryl substituted alkyl, halogen, or a combination of any of the foregoing, provided at least one R is aryl.

[c10] 10. The thermoplastic resin composition of Claim 1, wherein the organo phosphate is a compound of a formula selected from the group consisting of :



wherein R^1, R^2, R^3, R^4, R^5, R^6, and R^7 are independently, a hydrocarbon of C1 to C20, an aryl, an alkyl- substituted aryl; X^1, X^2, and X^3 are halogen; m and r are 0 or integers from 1 to 4, and n and p are from 1 to 30, and wherein when m and/or r are 0, the aromatic rings contain hydrogen without halogen substitution.

[c11] 11. A thermoplastic resin composition comprising:

a thermoplastic resin comprising a polyphenylene ether resin, a high impact polstyrene resin or an acrylonitrile-butadiene-styrene resin;

a rescorcinol bis(diphenyl phosphate) compound in an amount less than or

equal to about 20 parts by weight for every 100 parts by weight of the thermoplastic resin; and

a polyhydric alcohol compound in an amount of about 0.25 to about 5.0 parts by weight for every 100 parts by weight of the thermoplastic resin.

[c12] 12. The thermoplastic resin composition of Claim 11, wherein the polyhydric alcohol is selected from the group consisting of pentaerythritol, dipentaerythritol, tripentaerythritol, pentitols, hexitols, and saccharides.

[c13] 13. The thermoplastic resin composition of Claim 11, wherein the polyhydric alcohol is in an amount of about 0.5 to about 2.0 parts per weight for every 100 parts by weight of the thermoplastic resin.

[c14] 14. The thermoplastic resin composition of Claim 11, wherein the polyhydric alcohol is an amount of about 1.0 parts per weight for every 100 parts by weight of the thermoplastic resin.

[c15] 15. A flame retardant article comprising the composition of Claim 11, wherein the flame retardant article has a VO flame rating at a thickness of 1.6 millimeters as measured in accordance with UL-94.

[c16] 16. A method for the manufacture of a flame retardant thermoplastic resin composition extrudate with improved flowability and Izod impact strength, said method comprising:

mixing a thermoplastic resin comprising a polyphenylene ether resin , a high impact polystyrene resin, or an acrylonitrile-butadiene-styrene resin with an organo phosphate compound and a polyhydric alcohol compound to form a mixture, wherein the organo phosphate compound is in an amount less than or equal to about 20 parts by weight for every 100 parts by weight of the thermoplastic resin, and wherein the polyhydric alcohol is in an amount of about 0.25 to about 5.0 parts by weight for every 100 parts by weight of the thermoplastic resin; and

extruding the mixture to form the extrudate.

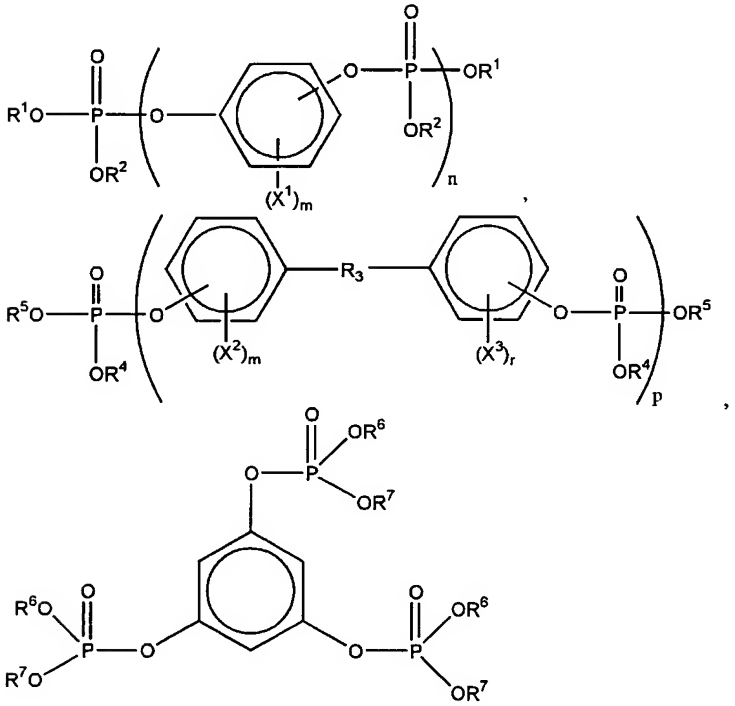
[c17] 17. The method of Claim 16, wherein the polyhydric alcohol is selected from the group consisting of pentaerythritol, dipentaerythritol, tripentaerythritol,

pentitols, hexitols, and saccharides.

[c18] 18. The method of Claim 16, wherein organo phosphate is in an amount of about 1.0 to about 1.5 parts per weight for every 100 parts by weight of the thermoplastic resin.

[c19] 19. The method of Claim 16, wherein the organo phosphate compound is selected from the group consisting of RDP and BPA-DP.

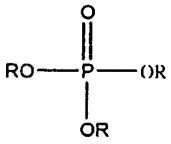
[c20] 20. The method of Claim 16, wherein the organo phosphate is a compound of a formula selected from the group consisting of:



wherein R^1, R^2, R^3, R^4, R^5, R^6, and R^7 are independently, a hydrocarbon of C1 to C20, an aryl, an alkyl- substituted aryl; X^1, X^2, and X^3 are halogen; m and r are 0 or integers from 1 to 4, and n and p are from 1 to 30, and wherein when m and/or r are 0, the aromatic rings contain hydrogen without halogen substitution.

[c21]

21. The method of Claim 16, wherein the organo phosphate of formula:



wherein R is the same or different and is an alkyl, cycloalkyl, aryl, alkyl

substituted aryl, halogen substituted alkyl, aryl substituted alkyl, halogen, or a combination of any of the foregoing, provided at least one R is aryl.